

HACKS



Volume Two, Number Four

Studium Omnibus Habendum Est

June 1987

Newsletter on Time— Meeting Late

Our June meeting will be on the SECOND Saturday, which is June 13. This is due to a scheduling difficulty with the Burbank Pavilion, which we have grown to know and love. The meeting will be at the Pavilion on the Golden Mall, at the "foot" of Orange Grove, which is parallel to, and between, Magnolia and Olive. All this, and in Burbank, too! It begins at 10:30 A.M. and the half-hour before and the half-hour after are dedicated to time for members to copy from our vast (or at least half-vast) library of Public Domain software.

Et Hasta Be Astra

Lou Schwing, President of ASTRA SYSTEMS, will be featured at our June meeting. Lou will show and tell about the "BIG D," "THE ONE," and the System HD+ for the ST. It would be diskconcerting if you missed this hard-driving meeting. (oh, my!)

When Is Atari Faire 2.0 Contest

To the first person who can (in person to John King Tarpinian during the June 13 meeting) give the dates, times, and location of the ATARI FAIRE, VERSION 2.0, a prize of four free door prize tickets will be awarded. To the second person who can meet the above conditions, another four free door prize tickets. To the third person who meets the above conditions, our deepest sympathy.

Second Saturday Plan in Effect for July

Due to the unanticipated success of our June meeting being on the SECOND Saturday, and due to the fact that our illustrious ancestors saw fit to declare independence on July 4, our July meeting will be held on the SECOND

Saturday. Lest you become comfortable with this new arrangement, rest assured that the August meeting will return to the usual FIRST Saturday (probably).

Do We Have a Tuesday for You!

Tuesdays are meeting nights for us, for sure. The SECOND Tuesday, June 9, will be the meeting of our ST SIG. This meeting, like all Tuesday meetings, starts at 7:00 P.M. and ends at 9:00 P.M. and is held at the retail store, Logical Choice, which is on the east side of Lankershim, between Oxnard and Victory, in the Safeway shopping center. The THIRD Tuesday is our class in programming the 6502 chip. The FOURTH Tuesday is the MIDI-SIG, and COMPU-MATES will be there to make another one of their entertaining presentations. We are working on something for the FIRST Tuesday so that you will miss every episode of "MOONLIGHTING."

Beginners Class ST

Due to popular demand (or some kind of demand), Tony Lee will conduct another class for beginners on the ATARI ST. This will happen on the FIRST Saturday in June, June 6, at Logical Choice, at 11:00 A.M. We have it on good authority that the class will also be open to non-beginners.

PD Spotlight

by Alan Hagge

This month I'd like to look at three small, but quite useful utility programs for the 8-bit Ataris.

The first, called the AXLON 128K RAMdisk Patch, comes from ANTIC magazine, February 1986 (yes, 1986!). It does just what it says...it modifies Atari DOS 2.5 for use on the AXLON 128K RAMdisk. As an added bonus, it gives you not the 412 free sectors of the 130XE, you have 710 free sectors! Normally, this modification would have limited use, since not too many of us have the AXLON 128K RAMdisk. But a few (yours truly included) have upgraded our 800s

with 256K using an AXLON-compatible protocol. So if you're one of the few, this program can come in very handy!

The second program comes in very handy for anyone with a RAMdisk (800, XL or XE variety). Called RAMcopy!, it is from ANALOG, July 1986. This little gem allows you to automatically copy up to 16 files from your boot disk onto your RAMdisk when you first power up your Atari. To do so, you first run a BASIC program which asks for your RAMdisk drive number, a list of up to 16 filenames, and a name for the RAMcopy object file. It then proceeds to write this file onto your diskette.

While the program seems to work quite well, I wish the author had figured out an easier way to input the filenames. Having to re-write the RAMcopy! file each time you want to add another filename is a real pain! But I think you'll find the convenience worth the effort.

The last program this month is for all of you closet assembly-language programmers. For those of you who write small assembly language routines to do those things for which BASIC is just too slow, this program should be of assistance. It's called the BBK Monitor, and it is from the February 1987 issue of ANALOG magazine.

While not a full-fledged monitor, the BBK Monitor nonetheless provides some very desired features in a small (less than 4K bytes) program which co-resides with BASIC. It offers a mini-assembler, disassembler, memory change and memory dump, and many DOS functions, including binary file save and load. A caveat is the base conversion routine (hex to decimal and decimal to hex). The authors' use of the E: device makes correcting typos much easier, especially when using the mini-assembler.

The BBK Monitor, like all programs reviewed this month, has few frills, but gets the job done.

Until next time, remember...the worth of any program is inversely proportional to the weight of its output!



The President's Corner

by John King Tarpinian

Advance notice!!! Your September issue of Antic will feature ACENET in its Users' Group review. Gregg Pearlman, of ANTIC, and me talked for over two hours about ACENET and what it is. Don't miss this issue.

The work being done on the Southern California ATARI Computer Faire, Version 2.0 is ahead of schedule. I am getting all the support I have asked for from ATARI. We expect this year's Faire to be the best yet. Of course, we have only had one before this.

We had our first MiDi meeting in April. We had over forty people attending. Most of the attendees were professional musicians and new to H.A.C.K.S. Boy was I over my head. Lucky for us Glenn Felt is our SIG leader. Glenn knows his stuff. We have big plans for this new SIG. All the major MiDi software manufacturers will be coming to our meeting to show off their wares.

You beginners out there are welcome to attend. Glenn will be able to meet your needs,

too. He can talk and teach at any level.

Another SIG??? A few members have asked for a GRAPHICS-SIG. Do I hear a volunteer to lead that SIG? Don't be shy now step forward. The deal will be the same for you as for the other SIG leaders. You host the meeting and I get you what you need in the way of programs, guest speakers, etc. Give it a try. You cannot be any worse than I am at public speaking.

Another way to get word about the club is to attend other local shows. The Computer Trading Post is at the Glendale Civic Auditorium once a month. We will be setting up shop there. ACENET will be the host group and people will be referred to the group closest to them. But

let's face it, this is our home turf. H.A.C.K.S. has the most to gain. Anybody wanting to give up a Saturday is more than welcome to talk to me about working the booth.

In conjunction with the Computer Trading Post ASTRA has lent the club a System HD+ for us to use at these shows. Lew Schwing, president of ASTRA, will be at our June meeting to show off that and other products, too.

Remember, if you have questions between meetings I am just a phone call away. You might even just keep in mind that I start work at 7:00 AM. See you at a meeting or two.

Floppy Disk Data Resurrection for 5 1/4" Disks

by rootbeers

Well sooner or later it's bound to happen. A disk of yours sits in the sunlight or a drink spills on it. What do you do? Well this happened to me recently: a cup of tea spilled and destroyed my most recent workdisk. Even so, in ten minutes' time I had the data safely back.

Here's what you do: Take the disk to a sink with a dustless but soft cloth and a felt tip marker (preferably waterproof). Wash your hands. Mark the top of the disk itself near the hub. Tear open the welds on the side farthest from the opening for the head, but be careful not to bend or scratch the disk. Do not use a knife unless you know that it is not magnetized! On the disk I had, the welds could be easily torn; perhaps a new razor blade would be the next safest thing to use. In the following

steps, handle the disk by the edges and center only; if the area is polished don't touch it. Remove the disk itself from the sleeve and rinse it thoroughly under the tap. The water will easily run off the polished surface of the disk but will wet the unpolished areas. Use the cloth to dry the disk GENTLY; only the center and edges should be wet anyway. Allow the disk to air dry for a few minutes. Carefully insert the disk itself into the disk drive (without the sleeve) making sure the proper side is up. When you close the door of the disk drive, do so gently and be sure that the disk is properly centered. Try to read the disk (do a directory of it, for instance). You should be able to read the disk at this point. Back it up IMMEDIATELY!

That's pretty much the technique; I hope you never have to use it but if you do, I hope it works for you. If it doesn't though, you've learned a valuable lesson, right?

**YOUR
ARTICLE
BELONGS
HERE.**

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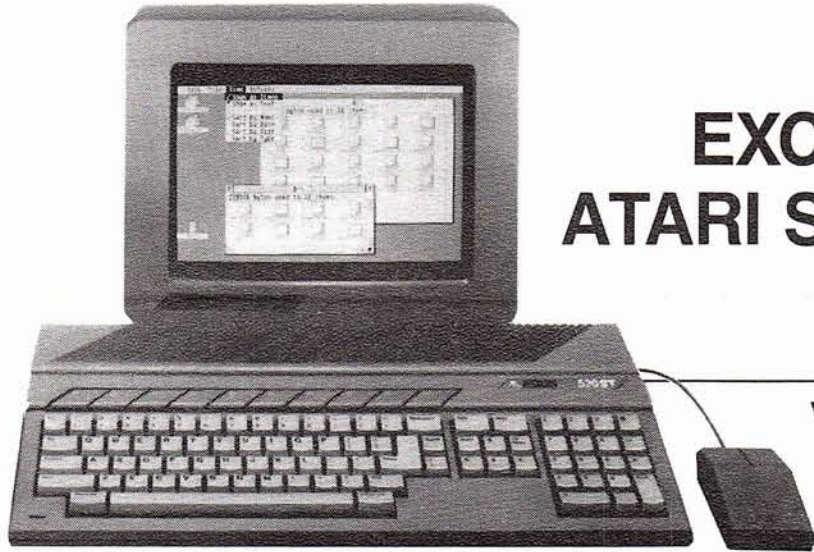
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On Track

by Norm Weinress

Converting the Atari CX22 Trackball for Use on the Atari ST

Here is another article for converting 8-bit trackballs for use on the ST. The subject this time is the Atari Model CX22 Trackball. This is one of the easiest to modify, though it still requires some skill and experience working with digital printed circuit boards. The CX22 is the one most recently manufactured by Atari.

There are two different conversions I'd like to present here. One is very simple and will satisfy most ST owners. The other is a little more complex, but will be a boon to all left-handed people who have a violent hate for the "right-hand minded" ST. The first will work just as the mouse supplied with the computer. But the second conversion has a switch that allows the user to reverse the right and left mouse buttons. I have permitted a left-handed ST owner to try this feature and he reports that it was very comfortable for him.

Let's describe the insides of the trackball and separate the different modifications later. To open it, place the trackball face down on a table and remove the four screws. Now the top is still held on by two friction fit pegs attached to the top. They fit into two hollow pillars rising from the floor of the bottom half of the case. The two holes you see at the top and bottom center of the case are the insides of these pillars.

The top can be carefully pried from the bottom at the seam, but the plastic is soft and you will mar the case. It's better to put a metal rod down the center of the pillars, resting on the bottom of the peg and gently tap on it to separate the case. I found a 16 penny nail with the point cut off square works very nicely.

Now you can remove the ball, the two drums with slotted plastic wheels attached and the third, idler wheel. Be careful, the ball bearing rings may slide off the drums. No problem, just don't lose them or get them soiled.

At this point you will see a printed circuit board with a cable attached at a connector. There are also a red and a black wire coming from the cable and soldered to the left fire switch; and a second set of red and black wires going to the right switch from the left one. This cable must be removed and replaced (it doesn't have enough wires) but remove it following these instructions.

Cut the six wires going from the cable to the connector on the top of the printed circuit board, close to where they emerge from the cable. You want to leave wires extending from the six-pin board connector. While it is possible to remove the cable connector and solder directly to the pins on the board, you'll find it much easier to just splice to the old wires coming from it. There is a second black wire coming from pin 1 of the connector which goes to the left pushbutton switch. Leave this connected; it provides the required ground connection for both switches.

Also cut the red wire going to the left-hand switch, again close to where it emerges from the cable sheath. The mouse/joystick cable is now free and can be removed. You can discard this, or use it as a source of hookup wire, as I did. Cut the second red wire going between the pushbuttons, close to the left switch.

Now looking into the case you'll see an oddly shaped circuit board. It is something between a triangle and L-shaped. The cable connector is in the top left corner. Each component has an identifying designation printed in white ink near it. There are five IC's in sockets. The IC's are named A1 through A5. You may remove the chips named A2, A3 and A4 and add them to your trophy case. If you are not going to wire the pushbutton reversing feature, you may also remove A5.

At this point, the instructions diverge. The simpler modification will be described first. However, one thing in common is the need to replace the mouse cable. This is done by cutting up a mouse/joystick extension cable. These are available from most stores that sell joysticks, including Radio Shack.

These extension cables are usually ten to twelve feet long with a female nine-pin D connector on one end (which will plug onto the ST mouse port) and a similar, male connector on the other end. Measure from the female

connector the length of cable you desire and add about six or seven inches. Cut the extension cable at that point and discard the half with the male connector.

Now carefully strip off the six inches of outer jacket at the cut end, exposing the nine inside wires. They will be color coded but you have to determine which wire goes to which socket pin of the connector. Do this with a VOM or continuity checker and write down the results. Wrap some plastic electrical tape around the outer jacket about an inch from the end and push this into the groove in the case where the cable enters. Add (or remove) tape until it's just possible to push it in the groove. Now you have a good strain relief.

*Numbering of the Mouse/Joystick Connector
(Looking at the connector that will
plug onto the ST)*

5 4 3 2 1
9 8 7 6

If you have identified which wire goes to each pin of the mouse connector, you can begin to wire the trackball. You may be able to solder wires to the proper places without removing the board, but I found it easier to remove it. You take out the two screws holding it down and carefully push the two clips apart, just enough to slip the board up.

Looking at the board with the cable connector at the top, you'll notice several solder pads at the bottom left corner labeled "TP" with a number. These are Test Points. If you have the tools needed, clean out the sold from TP1, TP2, TP3 and TP4. Now solder the following wires to the proper TP's.

Mouse Connector Pin	Test Point
1	1
2	2
3	4
4	3

Splice the red wire from the left pushbutton to the wire going to pin 6 of the mouse connector. Similarly, splice the red wire from the right side pushbutton to the wire from pin 9. Now look at that cable connector on the board. There are two black wires going to the



same pin, which is pin 1. One wire is still attached to the pushbuttons. Splice the other wire going to pin 1 of the mouse connector.

Getting tired of the word "connector" at this point? Never fear. We're almost done. Splice the wire from pin 2 of the board connector to the wire from pin 2 of the mouse. The wire going to pin 5 of the mouse connector is not used and may be cut off. That's it. Well almost. You have to put everything back together and route all those wires inside so they won't brush against the rollers, slotted wheels or the ball. Also, it would be a good idea to trim off the remaining wires coming from the board connector.

What's that you said? This is too easy. You want a little more of a challenge. Okay, let's include a reversing switch for the pushbuttons. The IC labeled A5 is a quad-two input multiplexer. You don't really need to know that to do this modification, but it sounds good at club meetings.

The differences from the above description involve bringing the pushbutton wires, the red ones, to the circuit board, wiring the multiplexer and getting the output to the mouse cable. For this procedure you must remove the board from the case.

The IC numbered A5 is a 4019B, a CMOS multiplexer. We will use this chip as a reversing switch to swap the functions of the right and left pushbuttons. The output of this chip is controlled by the slide switch on the board, which formerly was used to choose between the Joystick and Trackball functions of this device. We have already freed most of the inputs to this chip by removing A2, A3 and A4.

There remain two problems. We must have pullup resistors tied to the pushbuttons or the inputs to the multiplexer will be floating, a condition which must be avoided. Fortunately, resistors R5 and R6 are now available and can be used for this. The second problem is that one of these is tied to the comparator (A1) through C4 (next to R6). Notice on the component side of the board there is a circuit trace from the bottom of C4 going towards A1. This trace must be cut.

Next to A5 are two square capacitors, C5 and C6. Unsolder them and discard. Connect the red wire from the right pushbutton to the hole where C5 was, the end nearer R5; and connect the red wire from the left pushbutton to the hole where C6 was, again the end nearer R5. You will have to splice some wire to these red ones so they will reach. Be careful with the wire from the right switch! You must route it up near the mouse cable and then down to the board. If

you go direct you will interfere with a roller and slotted wheel.

From the underside of the board, jumper the pad where you connected the right side pushbutton to A3 pin 12 and A4 pin 3. From the pad where you connected the left side pushbutton, jumper to A4 pin 4 and A4 pin 13. Now the inputs are wired.

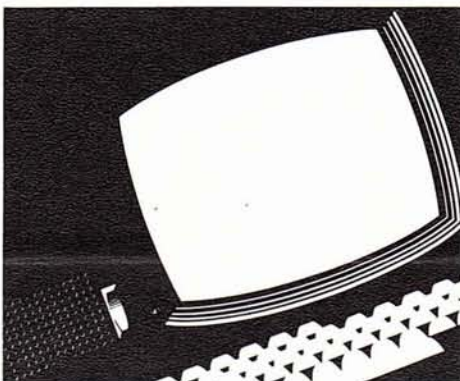
The outputs of the multiplexer go to the cable connector, pins 5 and 6. For this conversion splice the wire going to the mouse connector pin 6 to the board cable connector pin 5. Remember those pins are numbered right to left when the connector is at the top. Splice the wire from mouse pin 9 to the board connector pin 6. The remaining wires are the same as above, going to the four test points and pins 1 and 2 of the board connector. Again, two wires from the board connector (3 and 4) are not used and should be cut off.

As before, reassemble the trackball, being careful that the wires inside the case don't interfere with the rollers and slotted wheels. You're done! Just plug it in and go!

The reversing of the trackball pushbuttons is now controlled by the slide switch on the side. In the righthand position, and buttons are normal. In the lefthand position, they are set up for a lefty.

Tech Tips

To cut a circuit trace, take an Exacto knife and make two parallel cuts across the trace about a sixteenth of an inch apart. Cut them repeatedly until you are sure you are through the copper foil. Then hold a soldering iron right on the separated section while trying to pry under it with the tip of the knife. The heat



should soften the glue holding the foil and you should be able to lift up the cut portion and remove it in about ten seconds. Doing it this way not only makes a sure cut, it is also easy to solder a piece of wire across it if you need to restore the circuit later.

One other tip deals with metal screws going into plastic cases. When reassembling them it is easy to miss going back into the same threads. Since the screw is so much harder than the plastic, you can easily force a new set of threads into it. This is called cross-threading and you end up destroying all the threads, so that the screw will not hold. The way to avoid this is to lightly put the screw in place and turn the screwdriver backwards, as if to remove the screw. Do it slowly and you will feel the screw drop a little bit at some point. At that position the screw is at the top of the original threads. You should be able to put in it with little resistance then and not ruin the threads.



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More ST Notes

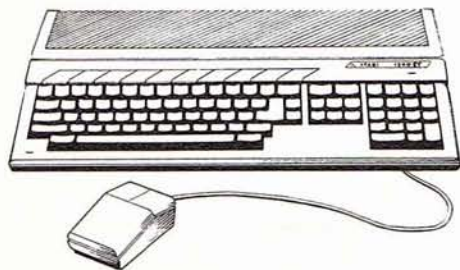
by Paul Graff

The March issue of the HACKS newsletter contained a very interesting and informative article entitled "ST Notes" by Steve Blackburn about creating text files for documentation of public domain software.

After reading this article, I sat down to see if I could create double-click-and-read DOC files, too. I followed Steve's procedure and it worked just fine. Then, I thought, what if I type in my DOC file while in WP MODE and utilize all the features of 1st WORD: word wrap, any justification, bold, underscore, light, italicized, center, indent, reformat, Greek and Hebrew characters, an add-on spelling checker, etc. Then, only after typing and editing a complete document, I would turn off WP MODE and save it.

Well, almost everything worked as I thought it would with the exception that special characters (Greek, Hebrew, etc.) did not appear correctly when the file was viewed by double-clicking its icon. As I expected, the special attributes (bold, italicized, underscore, etc.) did not appear, and "justify mode" only left the paragraphs left-justified when the file's icon was double-clicked. However, staying in WP MODE had powerful advantages of the word wrap, center, indent, spacing and reformat commands.

If you forget to turn off WP MODE before saving and obtain a bunch of gibberish when double-clicking its icon, just bring that file back up on 1st WORD, turn off WP MODE, save again and, presto, you have a file that can be viewed by double-clicking its icon.



Steinberg Twenty Four Sequencing Program

by James Lee Stanley

Since I've been a professional musician for the last twenty-five years, it's easy to see why I would be attracted to a computer sequencing program. I've recorded seven albums for various labels from RCA to Electra/Asylum. I've seen the squandering of thousands upon thousands of dollars in recording studios due to not being prepared to record when you actually get there. Now I know in the creative process there is bound to be hours of experimentation, but when you are paying a hundred dollars an hour, it tends to cramp your style. And that's where the idea of doing it in your home gets really attractive. I had heard a little about the sequencing programs available for the ST and, because the ST was a computer I could afford, I purchased one and anxiously awaited the release of what I thought was the best all-around program. The Steinberg Twenty Four.

For those of you who are unfamiliar with the techniques of recording, I'll give you a brief explanation. You are all familiar with stereo recording. There is a left track and a right track; both of which are read by a two track playback or recording head. Now imagine if instead of two tracks, you had twenty four tracks. And you can record on each of these tracks individually. When you make a cassette of your favorite album, you are recording on two tracks simultaneously. When a record is recorded in a studio, tracks are arbitrarily chosen. For instance, one track for the bass, one for guitar, four for drums, and two for synth. That would be eight tracks. Right now, most professional recording studios are twenty four tracks, so the above configuration would take up eight tracks and leave you with sixteen tracks. After the eight tracks are recorded, you can listen back to them and record with them at the same time, a process called "overdubbing". Steinberg has taken this concept and applied it to the ST with some pretty spectacular results.

The Steinberg Twenty Four is a twenty four track sequencing program. It is set up so that you can only record on one track at a time, but there are twenty four of them (hence the name). I picked up my program last January and set about to master the thing. It is now April and I am beginning to feel comfortable with it. Truly,

I can't figure out what took me so long to grasp it, but I do have a whole new respect for the term "user friendly".

The screen is laid out like a tape machine. Each track is visible at all times and when something is recorded on a track, a large ON lights up beneath each number. There are the familiar forward, fast forward and rewind commands, numerical locaters so you know where you are in the song; cycle to allow you to hear the same sequence over and over again if you need it; auto record to allow you to have the sequence play along and then automatically record you where you want to come in. (I can't begin to count the hours of my life that were devoted to this on the old analog tape machines, when I was my own engineer, producer, recordist and artist). Now you just tell the ST where you want to come in, where you want to get out and then push start. There is a command called Mastertrack, which allows you to change the tempo and the time signature within the same song. This is, I believe, the only program which provides this option. It may not seem important, but when you are trying to create the illusion of humans playing and everything is computer rigid, the need becomes self evident. Each track can also be solo'd while the song is playing, so that each part can be corrected if need be. And there is a powerful edit option, with a grid of the notes as well as a read out of their pitch, location, duration, and velocity, all of which can be manipulated. And every track can be assigned to any of the sixteen MIDI channels available. (MIDI is like a private line from the computer to a particular synth. When the synth and the track are assigned the same MIDI channel, then the information goes only to that synth. You can imagine the confusion if all the info for the bass, the drums, and the synths were going to each channel—the synth wouldn't know which instructions were meant only for it and the result would be cacophony.)

Nearly every command can be done by the keyboard, as well as the mouse; but there are commands that can only be accessed by the mouse. For me this does cut into its efficiency, as I prefer to keep my hands on the keyboard.

But the real joy, for me, is in the fact that it is not music that is being recorded by the computer, but merely instructions. That means that after you write a part for one sound you can have the computer play that part on any other sound, in any other octave. This is where so much experimentation comes in. This is the fun.

In summing up the Steinberg 24, I would say that it is a little difficult to grasp initially, but well worth the effort. I just got my first scoring job for a CBS-TV prime time special, which I could not have done without this program. And the job is paying me fifty times what the program cost. I can't wait for the next gig.

RAMdisk Organizer

Kees Jongsma

Questions Can Be Left on Magic Castle under the Name "Dutch"

Name	Reset	Var. Size	Ram Name	Desk. Acc	Auto Boot	Notes
RAMXXX	no	yes	D	no	yes	size set by which file is booted copy only ramdisk of appropriate size
RAMDISK	yes	yes	D	no	yes	Size set by key combination during boot (see documentation)
FASTRAM	no	yes	C,D,E	no	yes	Needs .INF file to set ram size see notes and documentation
JDISK	no	yes	D	no	yes	also sets time and date size inputted during boot max. of 379K
INTERAM	no	yes	C,D,E	yes	no	shows how much ram left.

A ramdisk can be defined as an area of a computer's memory that is set aside to be used as a disk drive. This is accomplished by redirecting the computer's pointers that indicate where ram is located. The advantage of using a ramdisk is usually associated with speed. The access time for a ramdisk is significantly less than a normal disk. In addition, ram disks simplify the handling of files, face and/or disk copying.

There are five different types of ramdisks in the H.A.C.K.S. public domain library, each offering different options and memory sizes. The program "Ram Auto Loader" automatically adds a disk into the ramdisk when the system booted.

Below you will find a discussion of how to set up a ramdisk, with a description of the various ramdisks that are provided. Each of the folders on the disk "ramdisk organizer" has been annotated thru the Notepad accessory. This will provide you with a quick reference as to how the ramdisk works and allow you to add additional notes as needed. Some of the ramdisks come with documentation that can be dumped to screen or printer.

SETTING UP A RAMDISK—This section assumes that you are setting up a ramdisk from scratch—i.e. you are not using a ramdisk folder from the "Ramdisk Organizer". The first step is to read whatever documentation is available on that ramdisk so as to gain a complete understanding of how the ramdisk works. Then copy the program to the destination disk. Run the program and follow any instructions given. Set up a ramdisk by selecting either Floppy A or B, select "Install Disk Drive" from

the options menu, move the ramdisk to where you want. Finally, save Desktop for future use. The next time the disk is booted the ramdisk will not have to be recreated and running the ramdisk program will be the only thing needed.

THE RAMDISK ORGANIZER—If the above section seemed confusing at all, you will find this section a real time saver. The RAMDISK ORGANIZER is set up so that all you have to do is:

- 1) Insert RAMDISK ORGANIZER disk
- 2) reset computer
- 3) remove RAMDISK ORGANIZER and insert destination disk
- 4) open ramdisk folder of interest
- 5) copy file contents to destination disk

If the above steps are followed, you will have a disk set up for ramdisk operation. The next time you boot this disk it will be ready to go. The actual operation of the disk will vary depending on the nature of the ramdisk that you are using.

The RAMDISK ORGANIZER will provide your destination disk with the following:

- 1) Notepad accessory
- 2) Annotation for the ramdisk
- 3) Available ramdisk documentation
- 4) Desktop.inf file

It is recommended that the notes from the notepad file are read before you use the ramdisk as I have given any peculiarities in that file. The Notepad can be called up from the Desk menu and is easy to use.

RAMXXX—This ramdisk comes in a number of predetermined sizes and written as an accessory that boots automatically. When copying this file, copy only the 1 ramxxx which meets your size requirements. Copying the entire folder will only confuse your computer.

RAMDISK—Ramdisk is the only persistent ramdisk in our library. If the computer is reset the contents of the ramdisk will not be destroyed. In order for it to work the disk in the drive should contain the program and if the ramdisk program is not in an auto folder it should be run again.

The size of the ramdisk is determined by pressing various key combinations while the program is booting. For example, holding the

"Control and Left Shift" keys during boot-up will result in a ramdisk of 384K in size. If no keys are depressed the ramdisk will default to either 194K or 512K depending on your system.

This is the ramdisk I used for the RAMDISK ORGANIZER and it works fine without pressing any keys since the default ramdisk size is large enough for this disk.

FASTRAM—Can be set up with any legitimate ramdisk name. The size and name is determined by an INF file called ramdisk (ramdisk.inf). This file can be written with First Word in the non-word processing mode. C320 written with First Word and saved as Ramdisk.inf will set up a ramdisk "C" with a size of 320K.

JDISK—This ramdisk has a maximum size of 379K but allows you to input the size when it boots up. In addition, it asks for time and date as well.

INTERAM—Runs as a desktop accessory of any size. The size is changed by clicking above or below the size numbers. It will allow C,D,E as names and indicates how much ram is left once the ramdisk is set up.

RAMAUTLD—The RAMAUTLD folder contains a program (RAMDLD) that will automatically transfer programs from the disk to the ramdisk. This feature is used on the RAMDISK ORGANIZER.

The program "Ramdid" looks for a file called "file.lst". This file can be written with First Word in the non-word processor mode. The format for writing this file is as follows:

FOR FILES IN MAIN DIRECTORY:

Program Name

FOR FILES IN FOLDER:

/Folder/Program Name

FOR FILES IN A FOLDER IN A FOLDER:

/Folder Pri/Folder Sec/ Program Name

RAMDLD will automatically set up the folders and load the program. See the file.lst on the RAMDISK ORGANIZER for an example.

Good Luck.



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